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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,395	10/18/2001	Arild E. Skjolsvold	MS1-2624US	7192

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EXAMINER	
BONSHOCK, DENNIS G	
ART UNIT	PAPER NUMBER
2173	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/31/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/31/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lhptoms@leehayes.com

Office Action Summary	Application No.	Applicant(s)	
	09/982,395	SKJOLSVOLD, ARILD E.	
	Examiner	Art Unit	
	Dennis G. Bonshock	2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-11,13-15,17-20,22-28 and 40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 8-11, 13-15, 17-20, 22-28, and 40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Final Rejection

Response to Amendment

1. It is hereby acknowledged that the following papers have been received and placed on record in the file: Amendment as received on 11-20-2006.

2. Claims 1-39 have been examined.

Status of Claims:

3. Claims 1-6, 8-11, 13-15, 17-20, 22-28, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker et al., Patent No.: US 5,781,720, hereinafter Parker and Santee et al., Patent No.: US 6,854,089.

4. Claims 7, 12, 16, 21, and 29-39 have been cancelled by the applicant.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, 8-11, 13-15, 17-20, 22-28, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker et al., Patent No.: US 5,781,720, hereinafter Parker and Santee et al., Patent No.: US 6,854,089.

3. With regard to claims 1, 13, and 22, Parker teaches a system that does automated testing of a GUI environment, through the generation of a mapping between

GUI objects and their functions (see column 4, lines 1-26, column 16, line 53 through column 17, line 12, column 25, lines 4-8 and column 9, lines 50-67), the executing of an executable feature of the Logical Screen Element (LSE) (see column 4, lines 39-45), a LSE Manager that identifies locations of the LSEs (see column 10, line 1-9), and storing the information for GUI objects in tables in the GUI and in the memory (see column 12, lines 50-65, column 4, lines 39-45, and column 9, lines 11-21). Parker further teaches, in column 9, lines 50-67, the LSEM storing functions that correspond to (are mapped to) objects on the screen, and in column 12, lines 50-56, the test driver having access to the LSEM for driving the application.

To summarize and further provide a one-to-one correspondence between the claimed invention and the reference, Parker's system teaches proceeding through an order set of steps in a test script during execution, with the application progressing through different states (association mapped between script element and actual screen element, test step executed, look for change in GUI state, test next element) (see column 4, lines 38-58 and figure 5). The system receiving a function [executable feature] of a Physical Screen Element (PSE); there is then an association [mapping] (see column 17, lines 2-7) made with a Logical Screen Element (LSE) of the generic script, at runtime (see column 4, lines 21-26 and column 9, lines 59-64) for the particular step in the execution. After this element is tested (executed), the system changes which Physical Screen Element (PSE) the Logical Screen Element (LSE) is referencing [dynamically updating the association] (see column 4, lines 51-58, column 9, lines 50-67, and figure 5).

Parker teaches a test script that guides execution in a deterministic (directed manner) (see column 4, lines 38-58 and figure 5), but doesn't specifically teach specific different deterministic modes of systematic ordering. Santee teaches a system for testing a user interface, via a test script, by recursively selecting screen elements traversing the UI (see column 2, lines 43-54, column 5, line 44 through column 6, line 64, and figures 6 and 8), but further teaches implementing the processing in a directed manner, either traversing the elements in a depth first or a breadth first manner (see column 6, lines 9-17). It would have been obvious to one of ordinary skill in the art, having the teachings of Parker and Santee before him at the time the invention was made to modify the dynamic script testing system, of Parker, to traverse the elements in a depth first or a breadth first manner, as did Santee. One would have been motivated to make such a combination because depth first or a breadth first searching are art recognized means of efficient path traversal, and would provide for more efficient UI testing.

4. With regard to claims 2 and 23, which teach a system in which selection of an executable feature exposes a second graphic feature that is then treated the same as the first, Parker teaches, in column 4, lines 50-55 and column 9, lines 9-22 and in figure 5, that when one element exposes another element the second element is processed likewise, this continues in an iterative fashion. The system receiving a function [executable feature] of a second Physical Screen Element (PSE); there is then an association [mapping] (see column 17, lines 2-7) made with a Logical Screen Element (LSE) of the generic script, at runtime (see column 4, lines 21-26 and column 9, lines

59-64) for the second step in the execution. Santee further teaches this idea of a first elements execution revealing additional screen elements for test (see column 2, lines 44-54). In order to select an element not previously executed Parker further teaches, in column 27, lines 60-65, graphical items having a Boolean value to show if the item is currently executable. Santee further teaches the application mapper not mapping portions of the graphical user interface more that once. Depth first and Breadth first search further promote efficient, non-repetitive traversal.

5. With regard to claim 3, which teaches the retrieving comprising capturing information pertaining to the graphic element and the state of operation of the software application being tested, Parker teaches, in column 30, lines 15-19, a comparison based on captured information, for the current step in the testing process (see column 4, lines 38-58 and figure 5).

6. With regard to claim 4, which teaches that storing includes updating an indicator associated with the graphics element when an executable feature stored in association with the graphics element is executed, Parker further teaches, in column 27, lines 60-65, graphical items having a Boolean value to show if the item is currently executable. After this item is tested (executed), the system changes which Physical Screen Element (PSE) the Logical Screen Element (LSE) is referencing [update the association] (see column 9, lines 50-67 and figure 5).

7. With regard to claim 5, which teaches storing including organizing the retrieved information so that an executable feature stored in association with graphics element can be interpreted by a computer-executable application capable of accessing the

retrieved information, Parker teaches, in column 12, lines 50-65, the test driver accessing the information stored in accordance with the graphical objects.

8. With regard to claim 6, which teaches storing including organizing the retrieved information such that an executable feature stored in association with the graphics element can be interpreted by a user capable of accessing the retrieved information from memory, Parker teaches, in column 12, lines 50-65, a GUI that stores all information needed for the GUI objects in tables within the GUI and in memory, for the current step in the testing process (see column 4, lines 38-58 and figure 5).

9. With regard to claims 8 and 17, which teach selecting comprising (deterministically) selecting an executable feature not previously executed, Parker further teaches, in column 27, lines 60-65, graphical items having a Boolean value to show if the item is currently executable. Santee further teaches the application mapper not mapping portions of the graphical user interface more that once. Depth first and Breadth first search further promote efficient, non-repetitive traversal.

10. With regard to claims 9, 18, and 26, which teach the selecting comprising reviewing an indicator to select an executable feature not previously executed, Parker further teaches, in column 27, lines 60-65, graphical items having a Boolean value to show if the item is currently executable. Santee further teaches the application mapper not mapping portions of the graphical user interface more that once. Depth first and Breadth first search further promote efficient, non-repetitive traversal. It would be obvious having the teachings of Parker and Santee that selection could be made with

respect to the Boolean value of Parker that could be controlled to only execute each item only once similar to the selection techniques (depth-first/breadth-first) of Santee.

11. With regard to claims 10, 19, and 27, which teach selecting comprising (deterministically) selecting executable features in a depth-first mode of operation, Santee further teaches, in column 6, lines 9-17, implementing the processing in a directed manner, either traversing the elements in a depth first or a breadth first manner.

12. With regard to claims 11, 20, and 28, which teach selecting comprising (deterministically) selecting executable features in a breadth-first mode of operation, Santee further teaches, in column 6, lines 9-17, implementing the processing in a directed manner, either traversing the elements in a depth first or a breadth first manner.

13. With regard to claim 14, which teaches the capture agent being invoked by the application driver, Parker further teaches, in column 4, lines 15-20 and in column 30, lines 15-19, a comparison based on captured information executed by a test driver on the application program.

14. With regard to claim 15, which teaches the capture agent submitting retrieved information to the application driver, Parker further teaches, in column 4, lines 15-20 and in column 30, lines 15-19, a comparison based on captured information executed by a test driver on the application program.

15. With regard to claim 23, which teaches a system in which selection of an executable feature exposes a second graphic feature that is then treated the same as

the first, Parker teaches, in column 4, lines 50-55 and column 9, lines 9-22 and in figure 5, that when one element exposes another element the second element is processed likewise, this continues in an iterative fashion.

16. With regard to claim 24, which teaches the retrieving comprising capturing information pertaining to the graphic element, Parker teaches, in column 30, lines 15-19, a comparison based on captured information.

17. With regard to claim 25, which teaches that storing includes updating an indicator associated with the graphics element when an executable feature stored in association with the graphics element is executed, Parker further teaches, in column 27, lines 60-65, graphical items having a Boolean value to show if the item is currently executable. After this item is tested (executed), the system changes which Physical Screen Element (PSE) the Logical Screen Element (LSE) is referencing [update the association] (see column 9, lines 50-67 and figure 5).

18. With regard to claim 40, which teaches a state of operation of the software application includes a distinctive set of graphics elements, content, and associated actions of the software application during execution, Parker teaches, in column 1, line 13 through column 3, line 5, the changing state of a software program with items in distinct locations, content, and actions to be performed.

Response to Arguments

19. The arguments filed on 11-20-2006 have been fully considered but they are not persuasive. Reasons set forth below.

20. Applicant's arguments with respect to claims 1, 13, and 22 have been considered but are moot in view of the new ground(s) of rejection. However, some of the arguments remain relevant and are answered below.

21. The applicants' argue that Parker appears to retrieve testing-related information before testing.

22. In response to applicant's argument Parker teaches in column 4, lines 21-26, column 15, lines 28-32, and in column 17, lines 2-12, the system using a generic script which at the time of execution, references to logical objects, in the script, are translated to a form that allows identification of actual elements. This shows this developed mapping is not done until runtime. Furthermore, the mappings are changed after execution begins to test the next element (see column 4, lines 38-58 and figure 5). Parker teaches in figure 5, an iterative process of testing where each time through the cycle, new logical elements are assigned to specific actual values [420].

23. The applicants' argue that "Parker does not teach retrieving information descriptive of a state of operation of a software application being tested and at least one graphics element rendered during deterministic execution of the software application being tested, where the information identifies an executable feature associated with the at least one graphics element".

24. In response to applicant's argument Parker's system teaches proceeding through an order set of steps in a test script during execution, with the application progressing

through different states (association mapped between script element and actual screen element, test step executed, look for change in GUI state, test next element) (see column 4, lines 38-58 and figure 5). Parker is supplemented by Santee who teaches a system for testing a user interface, via a test script, by recursively selecting screen elements traversing the UI (see column 2, lines 43-54, column 5, line 44 through column 6, line 64, and figures 6 and 8), but further teaches implementing the processing in a directed manner, either traversing the elements in a depth first or a breadth first manner (see column 6, lines 9-17).

25. The applicants' argue that "Parker does not teach storing information related to an association between the executable feature and the at least one graphics element and the state of operation of the software application in a map data structure".

26. In response to the applicants' arguments Parker teaches the system receiving a function [executable feature] of a Physical Screen Element (PSE); there is then an association [mapping] (see column 17, lines 2-7) made with a Logical Screen Element (LSE) of the generic script, at runtime (see column 4, lines 21-26 and column 9, lines 59-64) for the particular step in the execution. This same test script is then reused for the next step (see figure 5).

27. The applicants' argue that Parker also does not teach "... dynamically updating the information related to the state of operation of the software application and the association in the map data structure upon execution of the executable feature".

28. In response to the applicants' arguments the examiner respectfully submits that Parker teaches, in column 4, lines 19-57, "At the time of execution of the test script, the test executive and the test driver take the references to the logical objects contained in the script and translate them into a form which allows the invention to identify, manipulate, and query the actual objects under test in the specific GUI"... "During execution, the steps of the test script are decoded by the text executive"... "If the test was successful, the text executive continues to execute the next step in the script, and proceeds in this manner until the test is complete."

Conclusion

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

30. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis G. Bonshock whose telephone number is (571) 272-4047. The examiner can normally be reached on Monday - Friday, 6:30 a.m. - 4:00 p.m.

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid can be reached on (571) 272-4063. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

1-23-07
dgb

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